

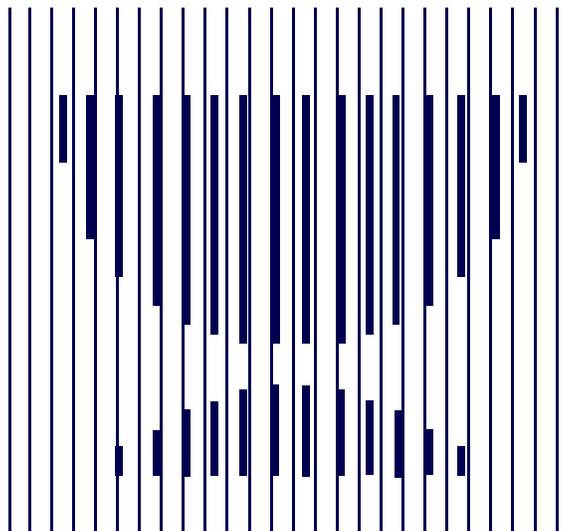


# CBO MEMORANDUM

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**PLANNING FOR DEFENSE:  
AFFORDABILITY AND CAPABILITY  
OF THE ADMINISTRATION'S PROGRAM**

**March 1994**



**CONGRESSIONAL BUDGET OFFICE**





# **CBO**

# **MEMORANDUM**

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**March 1994**

## **NOTICE**

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**CONGRESSIONAL BUDGET OFFICE  
SECOND AND D STREETS, S.W.  
WASHINGTON, D.C. 20515**



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The first detailed Clinton defense plan was presented to the Congress in the fiscal year 1995 budget submission. Congressional debate this year revolves around the issues of whether the forces in the plan will be sufficient to fight potential threats and whether they are fully funded in the plan.

This memorandum addresses these issues. It analyzes the capability of the forces the Clinton Administration expects to have by the late 1990s and their affordability in both the near and longer term. The memorandum also evaluates alternatives, but in keeping with the Congressional Budget Office's (CBO's) mandate to provide objective analysis, it makes no recommendations. It is provided as background for testimony by Robert D. Reischauer, Director of CBO, before the House Committee on Armed Services.

Lane Pierrot of CBO's National Security Division prepared the analysis, drawing on the work of a number of other CBO analysts. Neil M. Singer, R. William Thomas, and Michael A. Miller provided direction during the analysis. Geoff Cohen developed the analysis of capability for two regional wars and assisted with the overall project. Karen Ann Watkins also provided extensive assistance during the analysis. The discussion of the costs of operating weapons builds on analysis done by William P. Myers and Lisa Siegel. William P. Myers also estimated detailed weapons costs. Frances Lussier, Ivan Eland, and Lane Pierrot provided analysis of long-term funding for the services, while David Mosher and Raymond J. Hall, Wayne Glass, Rachel Schmidt, and Ellen Breslin Davidson and Amy Plapp did the same for ballistic missile defense, environmental cleanup, defense conversion, and DoD health costs, respectively. Rachel Schmidt compiled that analysis. Debbie Clay-Mendez and Amy Belasco contributed freely from their analysis on issues relating to operations and maintenance, military personnel, and readiness. David Mosher, Michael O'Hanlon, and James Horney made useful suggestions during review. Ellen Breslin Davidson reviewed the memorandum for accuracy. Paul L. Houts edited it, with assistance from Christian Spoor, and Cynthia Cleveland prepared it for publication.

Questions about the analysis may be addressed to Lane Pierrot at (202) 226-2900.

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## **SUMMARY AND INTRODUCTION**

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The fiscal year 1995 budget request is the first budget to contain the Clinton Administration's detailed plans for defense. The plans are based on analysis done over the past year as part of the Administration's bottom-up review (BUR). The review proposes cuts in conventional forces in all services to meet the Administration's targets for defense spending. As a result of the planned cuts in dollars and force structure, two major questions have surfaced that lie at the heart of this year's defense debate:

- o Are the dollars the Administration plans to devote to defense spending sufficient to support the forces that it expects to have?
- o Are the forces in the Administration's plans sufficient for its defense strategy, defined by this Administration as well as its predecessor as the ability to engage in two nearly simultaneous regional conflicts?

Clinton defense targets provide about \$104 billion less funding for defense during the 1995-1999 period than the Bush Administration would have provided.<sup>1</sup> But the BUR analysis suggests a number of forces could be cut while still maintaining the capability to fight two regional wars. The analysis also recommended canceling or scaling back a number of programs. As a result of these reductions, the \$1.2 trillion the Administration expects to spend on defense during the 1995-1999 period should be roughly sufficient to meet requirements.

The Clinton plan cuts operating funding less than it cuts forces. Operating funding would decline by 27 percent from 1990 levels, while major types of forces would be cut from about one-third (Army divisions and Navy ships) to almost one-half (Air Force wings). Thus, the planned operating funding should be sufficient to support the programmed forces. Procurement should also be roughly sufficient, although the Administration expects to buy considerably fewer ships, planes, and tanks than were bought in 1990. CBO's estimates suggest that Department of Defense (DoD) stocks of most major weapons should suffice at least through the 1990s.

The Administration's plan is subject to several risks, though they are small as a percentage of the plan's total funding. They raise concerns nonetheless because the budget fits snugly under the discretionary caps set out in the Omnibus Budget Reconciliation Act of 1993 (OBRA-93), and because the risks could arise after defense has experienced a number of years of declining budgets and thus the flexibility to address them might be lessened.

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1. Department of Defense, *Report on the Bottom Up Review* (October 1993), p. 107. The difference reflects a Clinton Administration estimate of the Bush Administration baseline.

**The risks include the shortages the Administration has identified in its plan; additional costs if savings from infrastructure reductions are delayed; and the possibility that costs will increase because of factors such as growth in weapons costs or requirements for environmental cleanup. Conversely, the Clinton Administration might make several further spending reductions if funding shortages arise.**

**The question of the affordability of the Administration's forces is more problematic in the long term. Over the 2000-2010 period, DoD would need an average of \$12 billion to \$25 billion more per year than the funding it would have if its budget only grew enough to offset inflation beyond 1999. (The range in these estimates relates to whether the Congressional Budget Office (CBO) assumes that the costs of future weapons grow.) The necessity for additional funding arises because future administrations would have to buy more major weapons on average during this period than are needed in the near term. Modest annual real growth in defense spending--about 1.5 percent annually from 2000 to 2010--would provide enough money even for the higher of these two budget paths. Should additional funding for defense not be forthcoming, further force cuts could be necessary to balance operations and acquisition funding.**

**However, further cuts to forces might be acceptable. The threats facing the United States are lower than they were during the Cold War. Instead of planning to fight a major conventional power such as the former Soviet Union, defense guidance calls for the capability to fight two smaller regional powers, though at the same time. CBO's analysis suggests that the forces the BUR provides would bring substantial capability to bear in two regional wars. (For purposes of analysis, CBO assumed one war in Southwest Asia against Iraq and one on the Korean peninsula.) Ratios of the capability of friendly to hostile forces in Southwest Asia would grow from about 0.6:1 at the beginning of conflict to about 2.8:1 after about three months of deliveries of U.S. troops and equipment. A nearly simultaneous conflict in Korea would start out with a ratio of about 1:1 and grow to about 2.6:1 after about two months of deliveries. These force ratios would provide sufficient capability to mount offensive operations in part of each theater while retaining enough forces to prevent further gains by the opposition.**

**These results suggest that DoD may be able to withstand further force reductions and still be able to bring significant forces to bear in two regional wars. CBO's analysis considers an alternative that would operate fewer forces. The Congress might wish to consider such a step if DoD encounters funding problems in the future. Alternatively, the Congress may wish to consider cutting acquisition programs or making changes in the ways DoD operates its forces.**

CBO's analysis also includes an alternative that keeps forces at 1994 levels, rather than cutting them to the levels in the BUR. According to CBO's analysis of the forces the United States might field in two regional wars, this alternative provides additional capability, but the increased capability would require about \$70 billion more for DoD than the Administration plans to provide during the 1995-1999 period. Although concerns about a more uncertain world might lead to desires for additional defense spending, this spending might not be readily available in the face of overall budget constraints.

## **DEFENSE IN CONTEXT**

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Budgetary decisions for defense are not made in a vacuum; the overall outlook for the federal budget and the deficit may dictate future defense budgets as much as requirements for defense spending derived from DoD planning scenarios. As long as the Administration and the Congress remain concerned about the impact of continuing deficits on the economy, prospects for the deficit will constrain future federal spending. In particular, the Omnibus Budget Reconciliation Act of 1993 extended caps through 1998 on total discretionary spending--the portion of the budget that includes the bulk of defense funding.

### **The Deficit**

CBO's March 1994 projections for future deficits are lower this year than last. CBO projects that the deficit will decline from the 1993 level of \$255 billion to \$228 billion in 1994, then drop sharply to about \$180 billion in 1995 and 1996. After that, deficits will begin to rise again, and by 1999 they are projected to be at \$213 billion, or about 80 percent of the 1993 level. Expressed as a percentage of the gross domestic product (GDP), the deficit remains at about 2.5 percent of GDP over the 1995-1999 period after dropping sharply in 1994. The ambitious deficit reduction package contained in OBRA-93 contributes enormously to the cuts in deficit levels in 1994 and beyond.

### **Discretionary Caps**

Caps on discretionary spending--established by the Budget Enforcement Act of 1990 and extended by OBRA-93--determine the amount of spending available to defense. Discretionary spending encompasses programs controlled by annual appropriation bills and is divided into three categories:

defense, international, and domestic. In 1991, 1992, and 1993, separate caps applied to the defense budget. From 1994 through 1998--the last year of the OBRA-93 caps--defense spending will be constrained by annual limits on total discretionary spending. OBRA-93 caps both the spending authority the Congress creates in these bills (budget authority) and the expenditures that result from that authority (outlays).

The caps for discretionary budget authority provide modest growth in nominal budget authority, rising from \$518 billion in 1995 to \$533 billion in 1998 (see Table 1). This increase, however, falls short of increases needed by component programs for projected inflation. Hence, the programs under the caps must make reductions in real--inflation-adjusted--terms. The caps on total outlays increase only slightly--from \$545 billion in 1995 to \$550 billion in 1998--and are even more restrictive than the budget authority caps given the current mix of spending.

How will these caps affect defense spending? Since defense must now compete with other discretionary programs for funds under the overall caps, this question is difficult to answer with certainty. The Administration's plan for discretionary spending represents one possible path. Under that plan, all elements of discretionary spending would experience real reductions over the 1995-1998 period. The Administration's plan falls short of the amount needed to keep pace with inflation by about \$120 billion. The Administration plans for defense to absorb the bulk of this difference--almost 80 percent.

### Defense's Share of Gross Domestic Product

If the Administration's reductions in defense spending are realized, defense's share of GDP will decline from 4.2 percent in 1994 to 2.9 percent in 1999. (Figure 1 shows defense spending's share of GDP for the 1947-1999 period.) After the reductions are made, defense spending will reach its lowest share of GDP since World War II.

Some proponents of altering the priorities in the Administration's plan might argue that, based on this trend, defense should receive more funding. Others will feel that a better way to address this question is to look at the components of the Administration's defense program in comparison with the threats faced by the United States, which clearly are less severe than at any time during the Cold War, despite the uncertain progress toward democracy in some of the former Warsaw Pact nations and the outbreak of ethnic hostilities in many countries.

**TABLE 1. DISCRETIONARY CAPS AND THE ADMINISTRATION'S PLANS**  
(In billions of dollars of budget authority)

	1995	1996	1997	1998	1995 to 1998	Shares of Reduction (percent)
<b>Discretionary Caps<sup>a</sup></b>	518	519	530	533	2,100	n.a.
<b>Administration's Proposal<sup>b</sup></b>						
Defense	264	256	253	259	1,032	n.a.
International	21	21	21	21	84	n.a.
Domestic	227	237	243	249	956	n.a.
Total	512	514	516	529	2,071	n.a.
<b>Funding Needed to Preserve Real 1994 Spending Level<sup>c</sup></b>						
Defense	269	278	287	295	1,129	n.a.
International	21	22	22	23	88	n.a.
Domestic	227	240	248	261	976	n.a.
Total	518	540	557	579	2,193	n.a.
<b>Compared with Proposal</b>						
Defense	-5	-22	-34	-36	-97	79
International	0	-1	-1	-2	-4	3
Domestic	0	-3	-5	-12	-20	16
Total	-6	-26	-41	-50	-123	100

SOURCE: Congressional Budget Office and Administration estimates.

NOTE: n.a. = not applicable.

a. CBO estimated end-of-session caps.

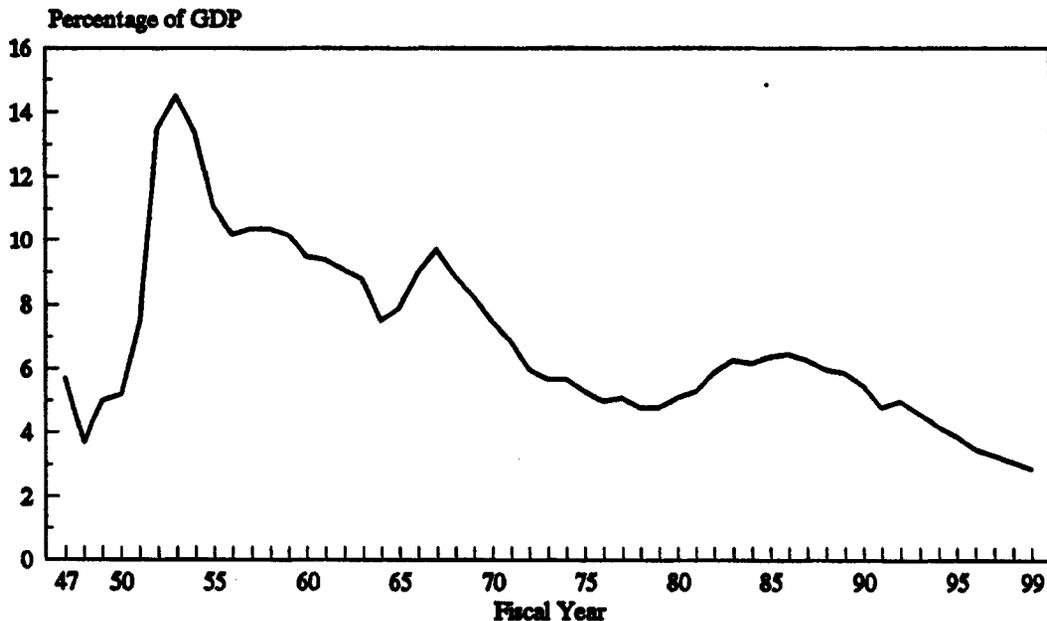
b. CBO's reestimate of the Administration's fiscal year 1995 budget request. The reestimate excludes the effects of the Health Security Act and the supplemental appropriations and rescissions enacted in P.L. 103-211.

c. CBO's estimate.

## DOES THE BUDGET PROVIDE ENOUGH FUNDING FOR THE ADMINISTRATION'S PLAN FOR DEFENSE DURING THE 1995-1999 PERIOD?

Trends in the threat to the United States can and do affect the size of the defense establishment. The Department of Defense expects to spend \$1.2 trillion over the next five years to maintain forces, buy existing weapons, and develop new ones. (See Table 2 for the Administration's spending plans by title—roughly, the categories the Congress uses to authorize and appropriate funds.) Although the Clinton Administration's plan provides much less spending than previous administrations had planned, cuts in the numbers of forces and in weapons modernization programs suggest that the Clinton Administration's reduced program is broadly consistent with its funding plan.

FIGURE 1. NATIONAL DEFENSE OUTLAYS AS A SHARE OF GROSS DOMESTIC PRODUCT



SOURCE: Congressional Budget Office based on fiscal year 1995 budget data.

**TABLE 2. TRENDS IN NATIONAL DEFENSE BUDGET BY TITLE**

Title	Budget Authority (In billions of 1995 dollars)						Change from 1990 Level (In percent)	
	1990	1995	1996	1997	1998	1999	1995	1999
<b>Department of Defense</b>								
<b>Military personnel</b>	91	70	65	63	62	61	-23	-33
<b>Operation and maintenance</b>	103	93	86	83	81	81	-10	-21
<b>Procurement</b>	94	43	47	47	52	53	-54	-43
<b>Research, development, test, and evaluation</b>	42	36	34	30	28	27	-14	-36
<b>Military construction</b>	6	5	8	5	4	4	-15	-38
<b>Family housing</b>	4	3	4	3	3	3	-9	-5
<b>Other</b>	-0	1	-5	-4	-4	-3	n.a.	n.a.
<b>Subtotal</b>	339	252	237	228	227	227	-26	-33
<b>Other Agencies</b>	12	12	12	11	11	11	-8	-8
<b>Total</b>	351	264	249	239	238	238	-25	-32

**SOURCE:** Congressional Budget Office based on Department of Defense data.

**NOTES:** Budget authority from the President's fiscal year 1995 budget. DoD price index used to express amounts in constant 1995 dollars.

n.a. = not available.

## Force Reductions and the Operating Accounts

The United States will be able to field considerably fewer major forces than it could during the Cold War. Most of the cuts will have been made by 1995 (see Table 3). Active Army divisions and Navy ships will be cut by about a third from 1990 to 1995. The number of tactical fighter wings in the Air Force will fall by an even larger percentage, to only about half the 1990 level. The number of active Army divisions will shrink by about 17 percent beyond

**TABLE 3. FORCES IN THE ADMINISTRATION'S PLAN  
COMPARED WITH 1990 AND 1995 LEVELS**

Service	Component	Forces			Percentage Change		
		1990	1995	1999	1990-1995	1990-1999	1995-1999
<b>Land Forces (divisions)</b>							
Army	Active	18	12	10	-33	-44	-17
	Reserve	10	8	8	-20	-20	0
Marine Corps	Active	3	3	3	0	0	0
	Reserve	1	1	1	0	0	0
<b>Naval Forces</b>							
Battle Force Ships		546	373	330	-32	-40	-12
Carriers		15	11	11	-27	-27	0
Wings	Active	13	10	10	-23	-23	0
	Reserve	2	1	1	-50	-50	0
<b>Tactical Air Forces</b>							
Wings	Active	24	13	13	-46	-46	0
	Reserve	12	7.5	7	-35	-42	-7

SOURCE: Congressional Budget Office based on Department of Defense data.

NOTE: The Navy has an additional carrier in reserve in each of these years.

1995, and the Navy will lose 12 percent more ships.<sup>2</sup> (The Army expects, however, to make most of the personnel cuts associated with these force reductions by 1995.) The Marine Corps will retain the same number of major units as in 1990, though Marine Corps personnel will decline by 12 percent over that period. Reserve forces generally will undergo smaller reductions than active forces--perhaps reflecting their lower operating costs--though tactical air reserves, protected in earlier budgets, are slated for cuts in this plan.

Funds to support these forces appear in the military personnel title, which provides pay and benefits for DoD's service members, and in the operation and maintenance title that pays for a number of different items, many of which relate to readiness. Both categories of funding will decline less than the forces they support. Compared with fiscal year 1990's funding level, military personnel funding will decline in real terms by about 23 percent by 1995, and by about 33 percent by 1999.

The number of active military personnel will decline from 1990 by about 26 percent by 1995 and about 30 percent by 1999. This decline suggests that the number of active personnel will also be cut less than the forces they operate (see Table 4).

Operation and maintenance (O&M) funding, too, declines by lower percentages than major forces. O&M spending will be down by only 10 percent in 1995 compared with 1990, and will decrease by only 21 percent by the end of the Future Years Defense Program in 1999. Funding in the accounts that make up this title is often perceived--along with military pay--to relate to what DoD terms "readiness"--that is, the ability of U.S. forces to go to war quickly and perform well. What determines readiness is not always well understood. But having well-trained, intelligent troops and functioning equipment--which are paid for largely out of O&M--are certainly important components of readiness. Thus, the smaller reduction in O&M spending, as compared with forces, may reflect the priority the Administration and the services place on maintaining readiness.

### Readiness Indicators

These priorities are also reflected in indicators of current readiness, according to a CBO analysis conducted at the request of the House Budget Committee. DoD uses a number of indicators to measure readiness--most with limitations. But some of the more objective measures suggest that DoD has been able to

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2. The Army plans to reduce the number of active maneuver brigades by a far smaller percentage.

preserve the readiness of its forces despite overall funding cuts. For example, the quality of recruits in 1993 remained at very high levels, and the percentage of DoD's stock of equipment that is ready to fight ("mission capable") has changed little, if at all, from levels in place since the mid-1980s. Even measures that appear to portend trouble--such as large backlogs in repair of equipment--may be misleading. The Army's maintenance backlog, for example, includes equipment made available from demobilized active units that has been sent to depots for reconditioning before being distributed to reserve units. The principal impact of that backlog will be to delay improvements in reserve readiness and capability rather than to lower the current readiness levels of active forces.

### Cuts to Procurement

Procurement accounts have taken the brunt of DoD's budget cuts. Cuts to procurement accounts make up about 60 percent of the \$87 billion real reduction between 1990 and 1995 in the annual DoD budget. Procurement appropriations pay for the aircraft, ships, tanks, and missiles that DoD uses to equip its forces, as well as a number of other systems. Fewer new weapons need to be bought to support a smaller force size. But annual procurement

TABLE 4. DEPARTMENT OF DEFENSE PERSONNEL (In thousands)

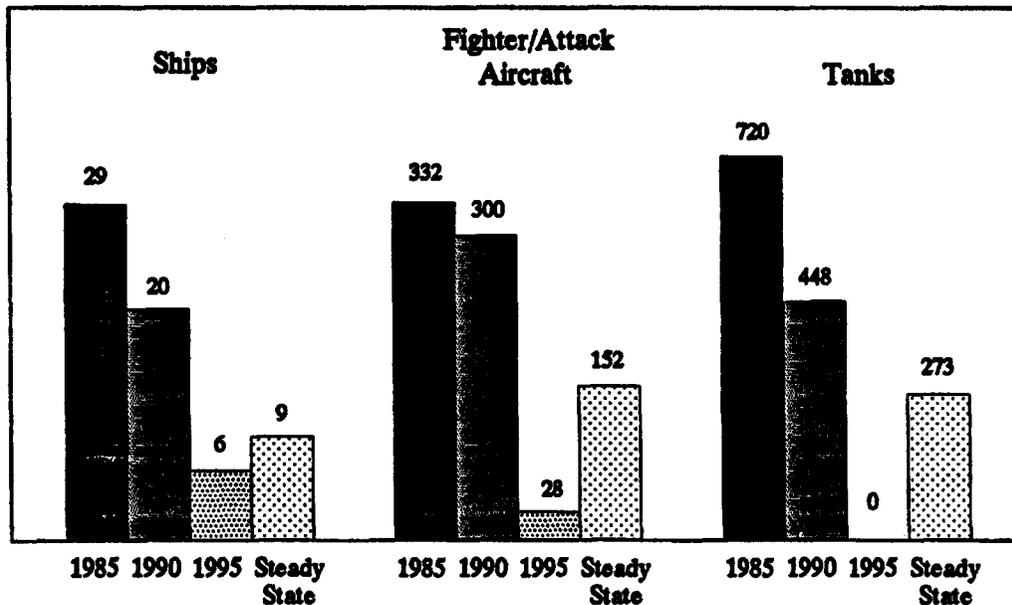
	1990	1994	Future Years Defense Program					Change from 1990 (In percent)	
			1995	1996	1997	1998	1999	1995	1999
Army	751	540	510	500	495	495	495	-32	-34
Navy	583	472	442	426	408	398	394	-24	-32
Marine Corps	197	174	174	174	174	174	174	-12	-12
Air Force	539	426	400	396	392	391	390	-26	-28
<b>Total, Active</b>	<b>2,070</b>	<b>1,612</b>	<b>1,526</b>	<b>1,496</b>	<b>1,469</b>	<b>1,458</b>	<b>1,453</b>	<b>-26</b>	<b>-30</b>
Selected Reservists	1,128	1,025	979	950	934	919	906	-13	-20
Civilians	1,073	923	873	846	822	809	794	-19	-26

SOURCE: Congressional Budget Office from Department of Defense data.

of major weapons has shrunk considerably more than forces (see Figure 2). For example, in 1995, the Administration requests funds for six new ships, about a third of the 1990 level of 20. Aircraft procurement drops to a tenth of its 1990 level. DoD plans to buy no new tanks for the Army in 1995, compared with 448 in 1990—though it requests funds for modernizing older M1 tanks.

This procurement "holiday" should be acceptable in the near term. According to CBO estimates, DoD will not run short of ships, fighter aircraft, or tanks through the planning period, despite the planned low levels of procurement. Indeed, the military services will have excess numbers of many types of equipment well into the first decade of the next century. DoD bought major weapons in large quantities during the 1980s, and the stock acquired then will suffice for a number of years. In addition, the cuts in forces will delay the need for replacing many types of weapons, since they permit DoD to equip the smaller number of units with the newest equipment.

**FIGURE 2. HISTORICAL PROCUREMENT DATA, NUMBERS OF WEAPON SYSTEMS**



SOURCE: Congressional Budget Office.

NOTE: The steady state estimate is the number of weapons DoD needs to buy each year, on average, to support planned 1999 forces.

The procurement holiday, however, cannot last indefinitely. Under the Administration's plans, the procurement accounts would grow modestly in real terms by 1999 to a level that is almost 60 percent of 1990 funding, compared with less than 50 percent in 1995. Funding for procurement will be almost \$10 billion higher in 1998 and 1999 than in 1995, as several new weapons enter production. But even with the increased funding, the number of weapons bought will be at low levels and eventually DoD will need to increase procurement quantities. More ships, planes, and tanks than are included in the Administration's procurement plan would be needed to sustain its forces in the steady state. (To calculate steady-state procurement, CBO simply divided the number of weapons DoD needs in its inventory by the length of service of each system. This yields a rough calculation of the number of weapons DoD would need to buy each year if past purchases had been made evenly. Eventually DoD may need to buy even more than steady-state quantities, since the majority of weapons bought in the 1980s would normally be retired toward the end of the next decade.)

Research, Development, Test, and Evaluation. RDT&E accounts will receive small reductions through 1995 relative to 1990 levels, being cut by 14 percent compared with a 54 percent reduction for procurement funding. This difference may reflect a deliberate policy of protecting funding for development. Developing weapons and getting them into the hands of service personnel takes longer than buying new equipment and fielding larger forces. This policy also reflects the premium the military services place on technological superiority. But RDT&E also reflect increases in some nontraditional costs. For example, most of the funds that the Administration expects to spend to help the defense industrial base convert to commercial activities are appropriated in the RDT&E accounts.

The Administration plans to cut RDT&E during the Future Years Defense Program period more than it has been cut recently. The Administration plans for RDT&E funding to fall to about 64 percent of its 1990 level during the period that funding for procurement is growing. Cutting funding for development may not be a problem for a number of years. The regional powers that the United States might face in conflict typically have much less sophisticated equipment than U.S. forces. Arms sales of top-of-the-line Russian equipment could somewhat improve the military capability of potential U.S. adversaries, but they may not be financially capable of large-scale arms purchases.<sup>3</sup>

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3. For more discussion of this issue see Congressional Budget Office, *Limiting Conventional Arms Exports to the Middle East* (September 1992), pp. 81-85.

The United States may also have less to fear from technological breakthroughs by potentially hostile nations. For many years, the major innovator hostile to U.S. interests was the former Soviet Union. Russia may seek to continue some Soviet development programs, but cash shortages and changed priorities are likely to curtail many of the efforts.

## **FACTORS THAT COULD ALTER THE ADMINISTRATION'S PLANS FOR DEFENSE SPENDING**

Several possible problem areas affect the affordability of the Administration's defense plan. Although each of these potential problems is important when budget resources are tightly capped, they do not amount to much as a percentage of funding included in DoD's plans. Perhaps the most reasonable concern about these issues is that they illustrate the size of the problems DoD might face, after several years of budget cuts that could limit the department's flexibility. (These examples, which are shown in Table 5, are neither additive nor exhaustive, but were chosen by CBO to illustrate possible sources of increases or decreases in funding without regard to overlap).

### **Added Costs in the Administration's Plan**

According to Secretary of Defense William Perry, the Administration's defense plan is some \$20 billion short of funding the forces it calls for. That amount apparently is the result of three factors: underfunding of the forces the Clinton Administration found in place under the Bush Administration's plan; additional costs for military and civilian pay as the result of Congressional action; and assumptions about inflation that have changed since enactment of OBRA-93. Some of the costs were offset by additional funding added by the Administration to its original DoD spending plan.

The Bush Administration's plan for defense funding totaled \$1,325 billion over the 1995-1999 period (according to the Clinton Administration's reestimate). The Clinton Administration's 1994 budget for defense, however, provided only \$1,221 billion for that period, a difference of \$104 billion.

The bottom-up review, by cutting forces, canceling or deferring modernization programs, and achieving additional infrastructure savings, managed to reduce defense costs by \$91 billion, according to DoD estimates. The remaining \$13 billion was to be found in savings during the normal program and budget review that followed the completion of the BUR.

Meanwhile, the Congress included in the 1994 DoD appropriations bill a pay raise for military personnel and locality pay adjustments for civilian employees (the Administration's request provided for neither in 1994). The higher rates of pay added some \$11 billion to estimates of DoD costs for the 1995-1999 period. Pay was not the only higher price DoD faced: the Administration's estimates of purchase price inflation for 1995 and beyond also increased future defense costs. Together, these three factors--the BUR shortfall, higher pay rates, and purchase price inflation--created a budget shortfall that former Secretary of Defense Les Aspin estimated at \$47 billion.

Two events subsequently reduced the shortfall. First, DoD's program and budget review cut an additional \$16 billion from the 1995-1999 estimates. Second, the Clinton Administration agreed to adjust upward the fiscal year 1995 budget request and out-year budget projections to fund the higher rates of pay. Together these actions reduced the shortfall from \$47 billion to Secretary Perry's reported \$20 billion (see Table 5 for annual detail).

**TABLE 5. EXAMPLES OF POSSIBLE INCREASES AND DECREASES IN DEPARTMENT OF DEFENSE BUDGETS (In billions of current dollars)**

	1995	1996	1997	1998	1999	Total	Percentage of Total Funding
Administration's Plan	252	243	240	247	253	1,236	100
<b>Examples of Additional Funding</b>							
DoD's Reported Underfunding	0	6	5	5	3	20	2
CBO's Estimate of Funding Needed if Infrastructure Reductions Are Not Realized	-4	2	3	5	5	10	1
Additional Funding for Environmental Restoration	4	4	4	4	4	20	2
<b>An Example of Possible Reductions</b>							
Possible Savings from Review of Strategic Programs	1	1	2	2	3	8	1

SOURCE: Congressional Budget Office.

The Administration, however, did not adjust its out-year defense top-line projections for the higher inflation rates in the 1995 economic outlook. Since the problem is in the out-years, not in fiscal year 1995, the decision taken was to defer acting on the \$20 billion shortfall until the 1996 budget request is prepared. At that point, several options may present themselves. If inflation projections are lowered next year, much of the problem might evaporate. If inflation is as projected (or higher still), the Administration could either agree to adjust the defense top line to reflect it, or, perhaps more likely, make additional reductions reflecting changes in programs or delays in execution to align DoD spending with the overall resource constraint. Another possibility is that DoD could identify savings from management efficiencies or acquisition reform that could offset the difference--certainly possible since \$20 billion is only about 2 percent of DoD's \$1.2 trillion plan.

### Cuts to Infrastructure

The Administration plans to make aggressive efforts to reduce DoD's infrastructure. About 20 percent of the savings the Administration expects from the bottom-up review relate to cuts in infrastructure. The Administration may experience budget pressure if it is unable to alter the balance between major combat forces and the forces and infrastructure that support them (see that line of Table 5). These numbers illustrate the magnitude of the shortfall that could occur if the Administration found it difficult to cut operating spending as much as it plans during the five-year period. In the aggregate, however, the additional funding needed is quite small as a percentage of the Administration's request.

Historically, roughly half of DoD operating costs have varied with force levels, and the other half have been relatively fixed. Thus, a 10 percent reduction in forces could be expected to yield a 5 percent savings in support costs, defined here as training, logistics, medical costs, headquarters, and costs to operate bases. This formula suggests that it might be difficult to realize large savings on infrastructure. But the usefulness of historical data to project future infrastructure savings may be limited. The history reflects a period when DoD kept roughly the same number of facilities. As the base structure shrinks in parallel with declines in force levels, this fixed element of support costs will diminish.

If there is a problem, failure might cause a repetition of the Army's actions in 1993. At that time, the Army was forced to cut its operating tempo--summarized in the average number of miles Army personnel drive tanks per year--when assumptions about infrastructure savings proved optimistic. To save money, the Army dropped its actual tank miles to 600

from the budgeted level of 800. Since the number of miles driven is an indicator of training that directly relates to how well Army personnel can perform in battle, such a large cut in miles driven could affect readiness.

### Added Costs for Environmental Cleanup

Increasing costs for environmental cleanup could also heighten the need for defense funds. These additional costs might total about \$20 billion, about \$4 billion on average for each of the next five years. The Administration plans to spend about \$12 billion on environmental restoration costs during the 1995-1999 period. But actual costs have been two to three times DoD's original estimates on cleanup projects DoD has undertaken. The potential growth in cost--shown in Table 5--assumes that DoD has underestimated its future costs as it has done in the past. This estimate may be overly pessimistic, though, since DoD may be better at making estimates of the costs of cleanup now that it has more historical experience on which to base them.

### Growth in Weapons Costs

Finally, weapons costs could grow. For example, DoD will begin buying the F-22, a new fighter for the Air Force, during the next five years. The F-22's unit cost is likely to rise above current assumptions, since the Administration plans to cut the number of planes bought. Cost increases stemming from reductions in total quantities result from buying fewer weapons at the end of the program when producers are more experienced. Thus, they might not affect funding in the early years of the program, but the F-22 still could cost more in the near term if the transition from development to production turns up costly problems, as some press reports are suggesting. CBO has not done an exhaustive analysis of all of the programs in the 1995-1999 period because of a lack of detailed data, but the F-22 does not appear to be alone as a candidate for cost growth. Among the other programs that might increase in cost are the V-22, the C-17, a joint trainer for the Air Force and Navy, a number of tactical missile systems, and the Seawolf submarine.

## PROSPECTS FOR DECREASES IN DEFENSE SPENDING

Several factors might counterbalance potential cost increases. One is the prospect that the Administration may further reduce strategic and ballistic missile defense programs. The Administration focused on conventional weapons in the bottom-up review, but it promised that a detailed study of strategic forces is under way. It is difficult, of course, to estimate how much

might be saved from alternatives that have not yet been specified. (Table 5 includes estimates of potential savings for these forces, based on options discussed in more detail in CBO's annual publication *Reducing the Deficit: Spending and Revenue Options* (March 1994). The options include reducing nuclear delivery systems and reducing the scope of the ballistic missile defense program.)<sup>4</sup>

Although costs for environmental cleanup may rise significantly during the next five years, the Congress and DoD could reduce spending for cleanup or at least moderate its growth. Savings could come from using more efficient methods of characterizing contaminated sites, applying less costly methods of cleanup, and negotiating less stringent cleanup standards for contaminated facilities. Alternatively, DoD could delay remediating costly contamination in cases where there is no immediate threat to public health and safety. The Army reduced the costs of cleaning Fort Meade by more than 60 percent by converting an artillery practice range into a game preserve with restrictions on public use.

In addition, according to Administration officials, DoD is planning a number of procurement reforms that could produce savings that have not been incorporated in the DoD budget. These reforms include making greater use of commercial products and exchanges of electronic data and reducing the overhead cost of government suppliers. Making more use of computer-aided design might also reduce costs.

Several analyses have tried to estimate savings associated with these types of reforms, though results range widely. CBO has no basis for estimating the portion of DoD's acquisition budget that would be affected, nor the magnitude of that effect. But it does seem clear that some savings can be achieved. If savings are realized--and history is replete with examples of overly optimistic assumptions about savings from reform--they probably would not be significant until after the year 2000. This timing could improve the long-run affordability of the Administration's plan.

## LONG-TERM PROSPECTS FOR DEFENSE AFFORDABILITY

It is also useful to consider prospects for defense budgets over a longer period than just the next five years, to assess whether current policies might lead to future problems. The projection period of this portion of CBO's analysis is

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4. Savings also include a reduction in Department of Energy funding for research and testing efforts for nuclear warheads, which is not a part of the DoD budget. Since it is a part of the overall defense budget, savings from this alternative might be applied to the DoD budget to remedy shortages if the Administration wished.

from the year 2000 to 2010. This extended a look is necessary since many weapons have long service lives and development efforts do not reach fruition for many years.

Future defense spending is heavily influenced by whether costs of weapons grow. CBO has made two estimates of long-term budgets. One estimate assumes that future administrations successfully constrain the growth of costs for future weapons. The other assumes that costs grow at rates that are consistent with historical experience. Both estimates assume that operating costs remain at 1999 levels, since DoD will have made its planned force cuts by then. The estimates also incorporate Administration or service plans for long-term procurement where they are available. In several cases where there is considerable uncertainty about what the Administration will do, CBO has made a best guess about what plans might materialize. (Tables A-1 through A-3 in Appendix A provide details about these assumptions.)

### Long-Term Trends Assuming No Cost Growth

Even if the costs of weapons do not grow above current estimates, DoD's budgets will need to grow in real terms from the funding level the Administration expects in 1999, the last year of the current plan. Growth occurs largely because CBO assumes that future administrations will need to buy more weapons during this period than it plans to buy during 1995 through 1999. For example, CBO assumed that DoD would buy an average of 48 fighters for the Air Force in each year from 2000 through 2010 (see Table A-2). This estimate compares with about five fighters bought annually, on average, during the 1995-1999 period.

Even without additional increases in costs, projections of needed funding exceed the 1999 level from 2000 to 2010, though costs are lower than the funding requested in this year's budget (see Figure 3). On average, DoD would need to receive about \$12 billion annually above what the Administration plans for in 1999, or about 5 percent more.

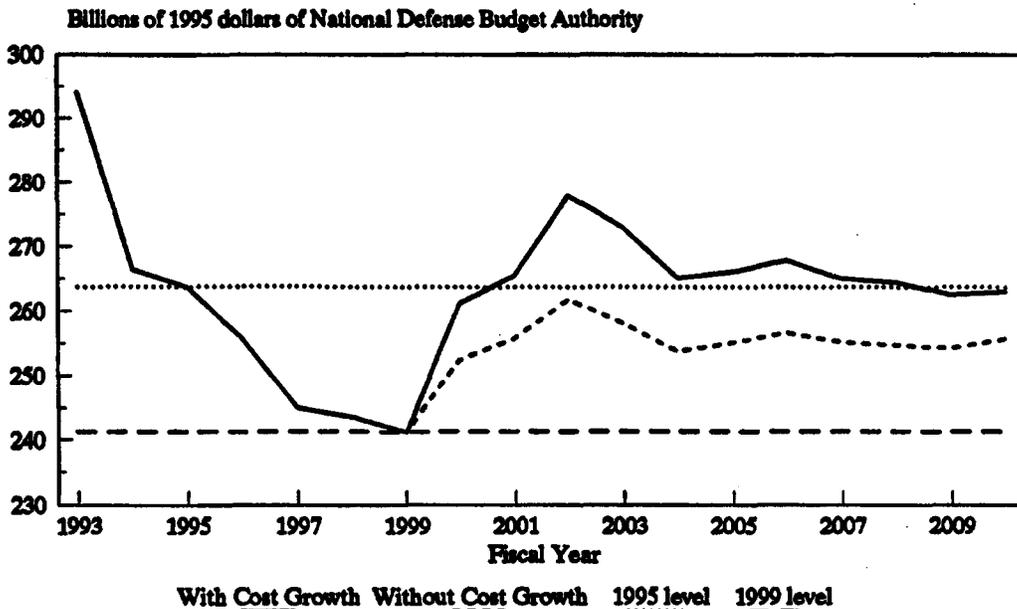
Growth occurs fairly early in the extended projection period. From the Administration's planned 1999 budget of \$241 billion, funding climbs rapidly to a peak of \$262 billion in 2002, when CBO assumes that an aircraft carrier, F-22 fighters, and C-17 transports will be procured simultaneously. Projections move downward after the early 2000s as C-17 production is completed, but it edges up near 2010 when CBO assumes that the planes to be developed under the Administration's Joint Advanced Strike Technology (JAST) program will enter procurement.

### Long-Term Trends Assuming Costs Grow

If history is a guide, weapon costs will be higher for new generations of weapons. Each new generation of tactical fighters has cost more than the preceding design, as much as two or three times more in some cases. The Navy's ships have grown in cost by 3 percent a year in real terms. And the Army's M1 tank costs more than twice its predecessor, the M60. If, as CBO assumes in its second estimate, these trends continue into the future, pressure for higher funding levels will be greater.

Since CBO did not alter the quantities and phasing of the weapons procured, peaks in the projection occur in the same years as in the no-growth case, but they are higher. Funding would total \$278 billion in 2002, for example, almost \$40 billion more than the Administration's plan for 1999 and \$14 billion more than the Administration's request for fiscal year 1995. On average over the 2000-2010 period, DoD would need annual budgets that are higher than 1999 levels by almost \$25 billion, or about 10 percent.

**FIGURE 3. BUDGET IMPLICATIONS OF THE ADMINISTRATION'S PLAN**



SOURCE: Congressional Budget Office.

## DoD's Budget Could Receive Real Increases Beyond 1999

Modest real growth in the defense budget beyond 1999 would provide DoD with ample funding even if the cost of weapons grows. About 1.5 percent annual real growth from 2000 to 2010 would provide sufficient funding, though higher real growth early in the period, offset by lower growth toward the end of the projection period, would be needed to match peaks and valleys in the estimate.

Some may argue that it is reasonable to assume that DoD will receive some real increases over the long term. Real increases of 1.5 percent a year are about 1 percentage point less than the rate of growth of gross domestic product through 1999. If GDP continued to grow at that rate through and beyond 1999, but defense spending rose only enough to cover growth in the cost of weapons, DoD's share of GDP would continue to fall from levels that are already historically low.

Conversely, some students of defense issues may argue that measuring DoD's share of GDP ignores an important point: the threat the United States faces is much smaller than it was during earlier periods. It is reasonable, they believe, for national priorities to accord much lower funding levels to DoD if the United States faces smaller threats. Thus, the affordability of the Administration's plan is closely linked to whether the forces the Administration plans to field are sufficient to meet the requirements it has set forth for them.

## THREATS TO U.S. INTERESTS: REQUIREMENTS FOR TWO REGIONAL CONTINGENCIES

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The United States faces a much less formidable array of threats today than during the Cold War. But the need to fight in two wars simultaneously--based on the planning scenarios several administrations have laid out--would keep forces at higher levels than would be required simply to match the capabilities of potential adversaries individually.

### Smaller Threats

During the Cold War, the United States expected the former Soviet Union to be able to field the equivalent of more than 90 armored divisions (see Figure 4). The massive power of the former Soviet Union exceeded the capability of U.S. forces even at Cold War levels. This comparison, however, may overstate relative Soviet superiority for several reasons. The former Soviet

Union would not have been able to devote all of these forces to a war on its western flank, since it would probably have withheld forces to protect itself against attack from the east. Non-U.S. NATO allies would have brought more capability to a European war than the non-Soviet nations of the former Warsaw Pact. Finally, the overwhelming Soviet superiority on the ground might have been at least partially offset by superior U.S. air assets, also shown in Figure 4. U.S. naval forces were also superior, and communications and readiness were probably at higher levels, although this is not reflected in these measures.

Few analysts foresee a return to Cold War tensions between the United States and Russia, despite current uncertainties and concerns. But even if Russia were to return to a more combative posture, the capability it can field is considerably diminished from estimates of Soviet capability. (See Figure 4 for a comparison of Soviet and Russian ground and aircraft scores.) As with the Soviet Union, Russian scores may be somewhat misleading since Russia would probably not be able to devote all of these forces to a western war. In addition, geopolitical changes may mean that some of its former allies would be adversaries in such a war.

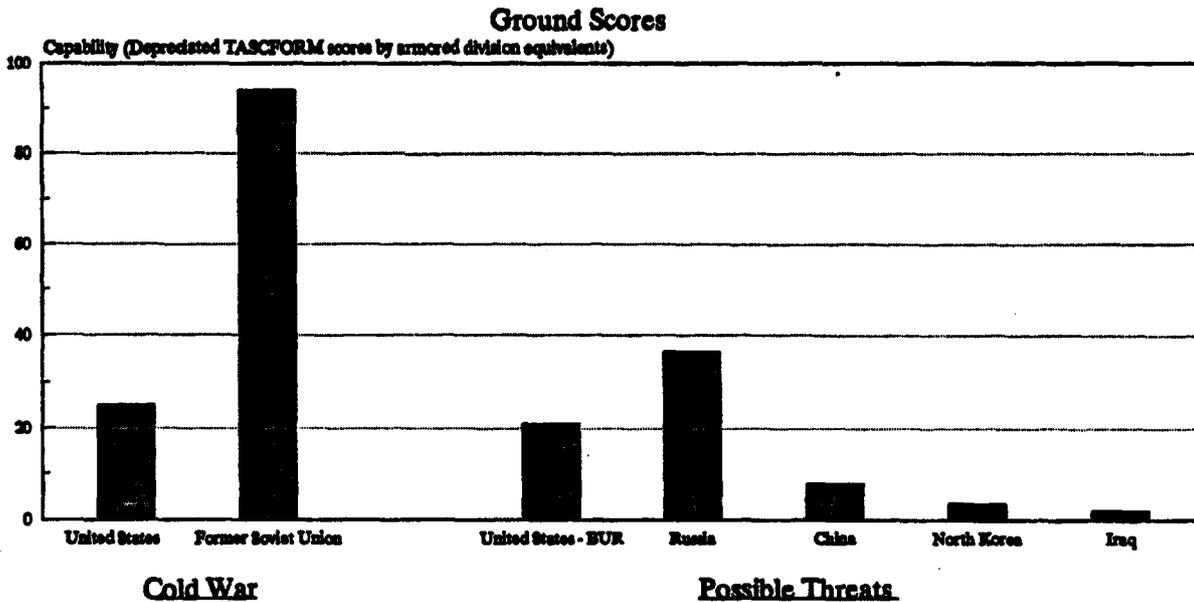
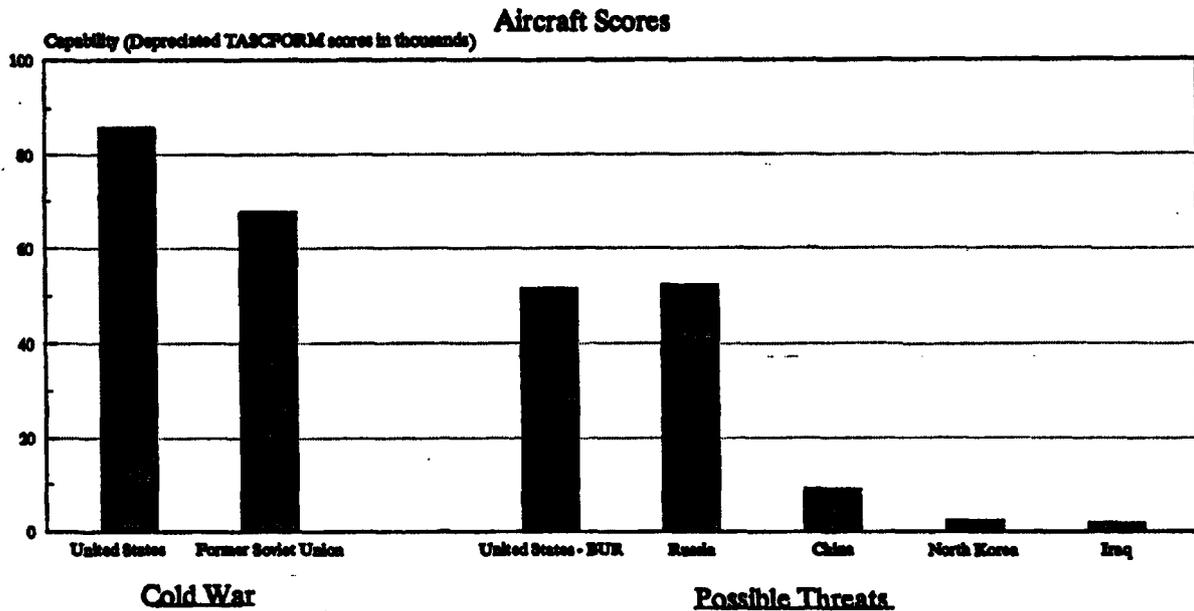
CBO's analysis uses an evaluation system called TASCFORM that was developed by The Analytic Sciences Corporation (TASC) for DoD. TASCFORM assigns a quantitative score--derived from assessments by military experts--for types of weapons, based on the characteristics of those weapons. The scores are best viewed as a measure of the combat potential of weapons in various forces, since they do not account for a number of factors, many of which might favor the United States in conflict. These omitted factors include personnel quality and training, the capabilities of communications equipment, appropriate warfighting strategy and tactics, and the ability of logistics forces to support personnel and maintain weapons. The measures also do not account for luck, leadership, and morale.

Russian ground forces will retain less than half of the capability of the former Soviet Union, though Russia may keep about 75 percent of the former Soviet Union's air capability (see Figure 4). Even these estimates may accord too much capability to Russian weapons, since a number of reports--including testimony by the Director for Combat Support at the Defense Intelligence Agency--indicate that the readiness of Russian forces is declining for a number of reasons, including lack of funds for supplies, spare parts, and training.<sup>5</sup>

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5. Statement of William Grundmann, Director for Combat Support, Defense Intelligence Agency, to the Joint Economic Committee of the Congress, June 11, 1993.

**FIGURE 4. COMPARATIVE SCORES OF SELECTED REGIONAL POWERS, 1995**



**SOURCES:** Congressional Budget Office estimates based on data from *The Military Balance* (London: International Institute for Strategic Studies, 1993-1994); The Analytic Sciences Corporation; U.S. Air Force; and U.S. Department of Defense.

**NOTES:** TASCFORM = Technique for Assessing Comparative Force Modernization. TASCFORM scores for the former Soviet Union are based on 1988 inventories. Scores for Russia and the former Soviet Union include inventories in both Europe and Asia. The former Soviet Union would probably have kept some of its forces in the east rather than devoting them to a western front. Consequently, these scores probably overstate the capability the U.S. and its allies would have faced. If Russia were to become a threat to NATO, it would also need to withhold some of these forces. Air scores include only fighter and attack aircraft inventories. Cold War scores for the United States are based on 1991 inventories. Scores for the United States under the bottom-up review (BUR) reflect projected 2000 inventories.

The Administration argues that it has sized future forces to be able to win virtually simultaneous conflicts against two regional powers. The Administration's analysis in the bottom-up review assumes--for planning purposes--that the two hostile countries would be Iraq and North Korea. As the figure shows, both Iraq and North Korea have much more modest capability than either the Russian Republic or the former Soviet Union.

However, the Administration wishes to have the capacity to fight two wars--one in Southwest Asia and one on the Korean peninsula--at almost the same time. So perhaps a better measure of the capability of the forces the Administration expects to have would be an estimate of scores for the forces the United States could field to each theater, assuming both contingencies occur together.

### The Administration's Planned Forces and Two Regional Conflicts

CBO estimated the buildup of U.S. forces in each of two theaters based on a number of assumptions. (See Appendix B for a more detailed description of the assumptions.) CBO's major assumptions were:

- o The war with Iraq would start first, and about a month later war would break out on the Korean Peninsula;
- o DoD would have the forces and equipment the Administration expects to have in 2000, including combat forces, lift, and prepositioned equipment;
- o The United States would fight with only indigenous forces as allies--Saudi and Kuwaiti forces in Southwest Asia and South Korean forces on the Korean peninsula;
- o Forces are counted once they arrive in theater. Thus, United States, allied, and hostile forces are measured as theaterwide buildups rather than as units deployed in a combat scenario;
- o Army Guard combat units would not be deployed to the regional conflicts, though guard and reserve support units would participate, as would air combat units; and finally,
- o One of two Army divisions in Europe would remain in place.

## The Adequacy of Airlift and Sealift

CBO's results reflect a number of actions this Administration, the previous administration, and the Congress have taken or are taking to improve U.S. airlift and sealift. Those actions include buying a number of sealift ships, improving the capability of the Ready Reserve fleet, and procuring 40 C-17s. In all, improvements in mobility will cost about \$33 billion. The Administration also plans to preposition equipment for three brigades of Army forces in Southwest Asia and aboard ships that could be at ports in Saudi Arabia soon after a war begins.

The Department of Defense has also taken a number of administrative actions that should facilitate mobilization. CBO assumed that the United States would act to begin full mobilization upon the outbreak of conflict. In Operation Desert Storm, although the United States did deploy a number of air and ground units quickly, a second wave of forces was deployed considerably later when the United States decided to engage in an offensive operation.

Without these improvements, certain of the unified commanders question whether today's airlift and sealift forces could cope with even one major regional contingency, let alone two. "Strategic lift in this country is broken right now," General Joseph P. Hoar, the Commander of Central Command, which encompasses the Middle East, has said in testimony before the Senate Armed Services Committee. General Hoar based his statement on several factors, including the recent limitation on the use of C-141 aircraft while cracks in wing supporting members were being repaired, uncertainty about the fate of the new C-17 airlifter, and possible limitations on the Maritime Administration's ability to secure crews for sealift ships it draws from the Ready Reserve Force.

CBO has not assessed the airlift and sealift problems that the services are experiencing today, though it appears that the problems that exist are being addressed. Most C-141s, for example, will have been inspected and repaired and returned to full service by the end of 1994. Also, in response to General Hoar's comments, Secretary of the Air Force Sheila Widnall said the United States would use all of its airlift aircraft, including the reserves, in war. More aircraft would thus be available than are for the peacetime fleets to which General Hoar was apparently referring. And the Administration has proposed assistance for the merchant marine fleet that might address concerns about the availability of crews for sealift ships. In any case, the analysis presented here is premised on the implementation of actions to improve airlift and sealift and to increase dramatically the prepositioning of equipment.

## Results

The results of CBO's analysis--shown in Figure 5--suggest that the United States and its allies could build forces to have substantial superiority in both theaters over the three-month period CBO examined in its analysis.

Results for Southwest Asia. In the Southwest Asia conflict, Iraq would start out with about double the capability of the indigenous forces of Saudi Arabia and Kuwait. By CBO estimates, the United States would be able to land enough forces to attain modest superiority within several weeks, and by the end of the period of CBO's analysis, allied forces would attain a ratio of 2.8:1.

Results for Korea. A conflict on the Korean peninsula would find friendly forces in a better starting position than in Southwest Asia, largely because of the strength of South Korean forces--augmented by forward-deployed U.S. forces--compared with North Korean capability. Because CBO assumes the United States would devote to the Korean contingency fewer heavy Army forces and more air and naval forces that can be deployed more rapidly, the ratio of friendly forces to enemy forces would rise to more than 2:1 by about one month after mobilization for the Korean war began. The ratio would build to about 2.6:1 within about two months.

What Measure of Superiority Is Required? Based on highly aggregated planning factors, the capability of the forces in both scenarios should be enough to assure a successful campaign, even if U.S. and allied forces take the offensive. A rough rule of thumb is that an attacker needs a local force ratio of at least 3:1 to win. Local balances of 3:1 in areas of offensive operations would need to be matched by sufficient forces in areas where no attack is planned to keep the enemy from achieving similar concentrations. For example, if the United States and its allies had an overall ratio of 2.7:1, then they could build to a local ratio of at least 3:1 over 20 percent of the area of engagement, while retaining a defensive ratio of 1:1 or higher throughout. Some analysts viewed defensive theaterwide balances from about 0.8:1 down to 0.5:1 as high enough to prevent a successful attack by the Warsaw Pact against NATO during the Cold War.<sup>6</sup>

These conclusions about force ratios certainly do not apply in every instance. History is replete with examples of campaigns won by outnumbered forces, in some cases with inferior equipment. Since leadership, luck, and morale are difficult to quantify, even the most complex models have failed to

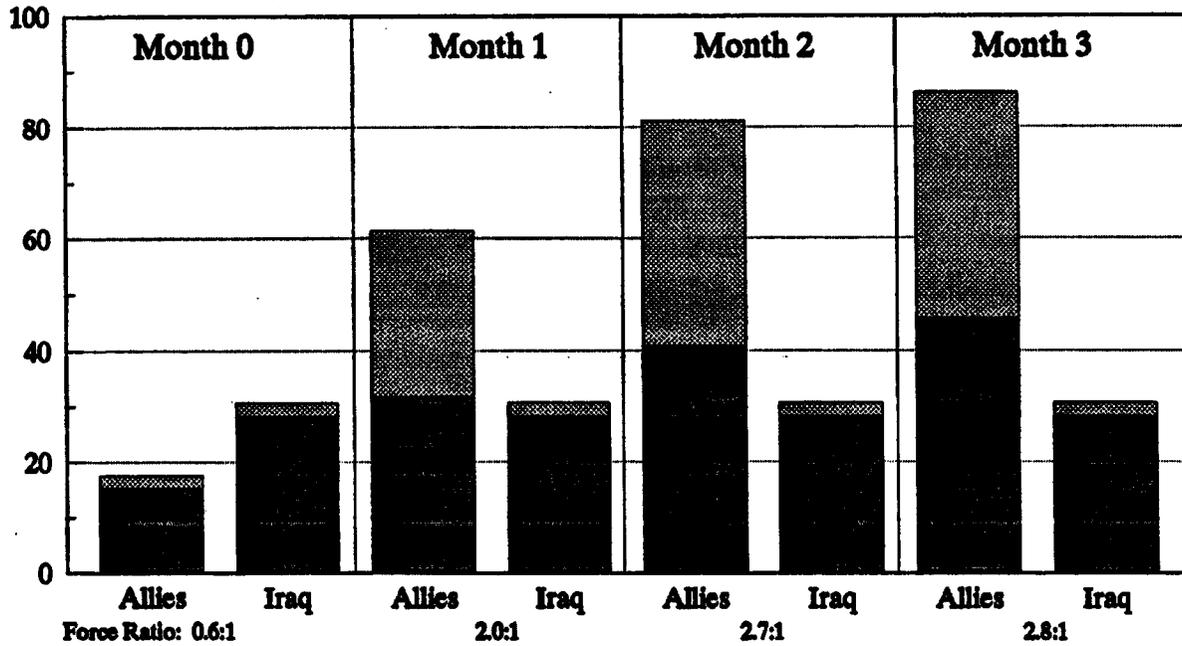
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6. Congressional Budget Office, *U.S. Ground Forces and the Conventional Balance in Europe* (June 1988), p. xv.

**FIGURE 5. COMPARISON OF SCORES FOR UNITED STATES AND INDIGENOUS FORCES IN THEATER**

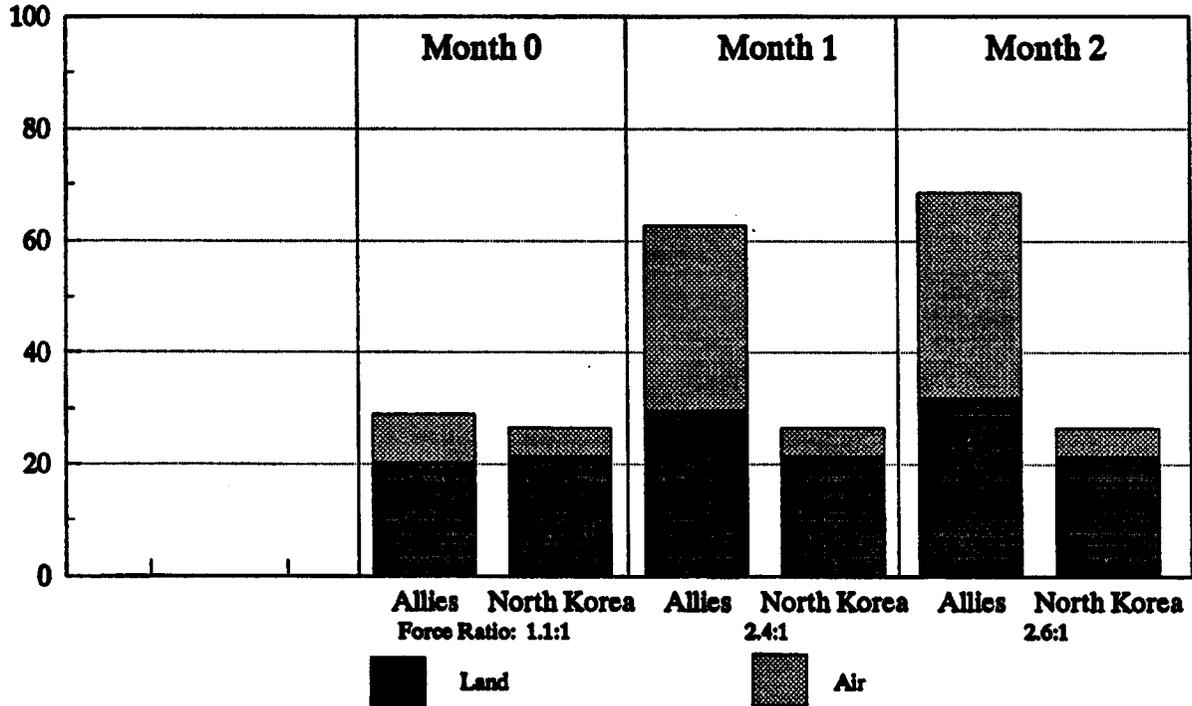
**Southwest Asia**

Adjusted TASCFORM score (Thousands)



**Korean Peninsula**

Adjusted TASCFORM score (Thousands)



SOURCE: Congressional Budget Office based on data from The Analytic Sciences Corporation.

solve this problem. Military tacticians would agree, though, that more is better, and that the outcome of underestimating the forces needed is likely to be higher U.S. casualties.

**Limits to the Analysis.** CBO asked the services and the Joint Chiefs of Staff (JCS) to review the analysis underlying these results. The most commonly raised criticism was that CBO's modeling efforts are too simplistic and do not forecast war outcomes. Another concern was that the forces CBO allocates to each conflict are not the specific forces the JCS would allocate in their own planning scenarios, nor does CBO's assumption of a month-long separation between the outbreak of the two wars match details in JCS planning scenarios. The Marine Corps argued that it would take several days longer to unpack equipment and test it before forces would be available to fight. The Navy raised the issue that enemy mining of port facilities could slow the arrival of U.S. forces. Finally, constraints on the capacity of port facilities and airfields could also limit the pace of the buildup.

These reservations suggest that CBO's analysis should be used with caution. Factors that could be incorporated in more detailed wargaming might suggest that higher levels of forces or lift could be needed. If, as the JCS suggested, enemy forces were to overrun friendly ports or airfields (as they did in Korea in 1950), a prolonged struggle could ensue to retake ports via amphibious assault. Or friendly forces might need to travel from greater distances to the engagement and fight for longer periods to regain territory. Deployment times could also be longer if the Navy had to engage in a prolonged minesweeping campaign before transport ships could land their equipment.

The JCS's detailed deployment schedules are classified, and CBO deliberately elected not to use them. But the forces described in the bottom-up review should be common to both analyses: the only issues are where they would go and in what order. Shifting forces that CBO assumed would be deployed later to earlier deployment, or shifting forces from one region to the other, ought not to change the overall outcome substantially.

Finally, estimates of airfield and seaport limitations indicate that under most assumptions, there would be little or no long-term delay in deployment because of crowding. A report by the Military Traffic Management Command--a part of Transportation Command that works out the details of U.S. mobility plans--concludes that seaports are largely capable of supporting a full deployment; similarly, Air Mobility Command noted that normally, the

Continental United States "does not represent a system constraint."<sup>7</sup> The total capacity of Saudi airports and seaports is well above requirements, as is South Korea's seaport capacity. Assuming the host nations were willing to allow deployment to displace commercial traffic, no delays would be incurred. A possible limitation is the lack of availability of the South Korean airports because of conflict; in such a case, Japanese airbases would be large enough to absorb the excess. In-theater assets (such as the C-130 aircraft) could then deliver assets to forward bases, as could the new C-17 airlifter.

Despite their limitations, the force ratios that result from CBO's model should serve as a rough guide for assessing how much capability the Administration's forces might provide in two wars. CBO's admittedly simple deployment model suggests that the Administration's planned force levels would bring substantial capability to two regional wars and that improvements in mobility should accelerate the buildup of that capability.

Of course, the United States has never had to face the actuality of two regional powers engaging in aggression against their neighbors within the same month--at least not where U.S. interests were sufficiently involved to cause it to go to war. DoD's planning process, which is understandably pessimistic on these matters, produces a "worst-case" scenario. If one were more optimistic, then perhaps one could plan for forces that are sufficient to fight in one regional conflict. Under this scenario the United States might be able to make further force reductions if, as the earlier analysis of long-term budgets suggests, more cuts need to be made in the defense budget.

## **ILLUSTRATIVE ALTERNATIVES**

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CBO conducted an analysis of several alternatives to the Administration's plans, looking at the cost and capability of:

- o Larger and smaller forces;
- o Cuts in operating costs for planned force levels; and
- o Further procurement and development cuts.

### **Increased Forces**

A number of participants in the defense debate have argued that the Administration's plan cuts forces too deeply. Concerned about tensions in

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7. Military Traffic Management Command, Transportation Engineering Agency, *A Study of Deployability Through the United States Strategic Ports* (Newport News, Va.: MTMC, April 1993).

Eastern Europe, perceived difficulties in fighting two wars at once, and the sharp decline in forces, they argue that cutting forces below today's levels is unwise. If the United States forces were to remain at today's levels, the Army would retain 12 active divisions--about 20 percent more than the Administration plans. The Navy would keep 387 ships, about 15 percent more than planned. The Air Force would be about 10 percent bigger, with 22 tactical fighter wings.

**Increased Capability.** Retaining 1994 force levels would increase the capability of U.S. forces to fight two regional wars. Because of lift constraints, however, most of the additional capability would not arrive until the end of the period CBO used in its analysis. An exception to this might be tactical aircraft: Navy tactical aircraft could arrive aboard carriers. Air Force tactical aircraft could probably fly to the theater quickly but would not be able to fight until their squadron equipment had arrived. Eventually, regional balances might rise to 3.2:1 in Southwest Asia compared with 2.8:1 for the Administration's forces. Korean balances would remain at 2.6:1.

**Increased Costs.** Costs for this alternative would increase both in the near term and in the longer term. The relatively large near-term increase would necessitate either substantially reallocating funds from other discretionary spending to defense compared with the Administration's plan, or relaxing the OBRA-93 caps.

**Near Term.** Assuming that the funding in the 1994 operating accounts would be sufficient to maintain 1994 force levels, operating costs would be almost \$70 billion higher over the five-year period (see Table 6). Procurement funding would probably not need to rise appreciably for most systems since, as indicated earlier, DoD has surpluses of most major weapon systems.

One exception to this finding is in the arena of naval carrier aircraft, where DoD will experience shortages even under the Administration's plan. Indeed, the Navy plans to take a number of measures including placing Marine Corps aircraft in Navy wings and reducing the number of aircraft per carrier to deal with its shortages. If the Navy retained two extra air wings, as this option assumes, it would need to buy about 48 more F/A-18s--roughly the number of planes for two wings--during the five-year period, and it would need several billion dollars more in procurement funds.<sup>8</sup>

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8. A notional Navy airwing contains 36 F/A-18s. But the Navy has too few F/A-18s to provide that many for each of its wings. F/A-18 stocks in the Navy might provide for an average of about 24 F/A-18s per wing. Thus, CBO's rough cost calculation assumes that about \$3 billion would be needed to buy 48 planes.

**TABLE 6. ALTERNATIVES TO THE ADMINISTRATION'S PLAN:  
EFFECTS ON COST AND CAPABILITY**

Approach	Savings (-)/ Costs for 1995 to 1999	Capability Ratio	
		Southwest Asia	Korea
Administration's Planned Forces		2.8:1	2.6:1
Keep Larger Forces (With 1994 levels held constant) <sup>a</sup>	70	3.2:1	2.6:1
Cut Forces Further (2 wings, 2 carriers, 3 light divisions) <sup>b</sup>	-23	2.6:1	2.5:1
Cut Acquisition Programs <sup>b</sup> Buy five fewer DDG-51 destroyers for the Navy	-5	n.a.	n.a.
Cancel Air Force's F-22 Fighter	-12	n.a.	n.a.
Cancel Army tank upgrade	-2	n.a.	n.a.
Cut RDT&E to Historical Shares	-12	n.a.	n.a.

SOURCE: Congressional Budget Office.

NOTES: RDT&E = research, development, test, and evaluation; n.a. = not available.

a. Administration's planned funding compared with 1994 baseline.

b. Estimates from Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options* (March 1994).

If these near-term increases were not offset by other reductions in the defense budget, it would mean that DoD would experience much smaller reductions in spending. If discretionary caps remain in place, defense would absorb only about 20 percent of the real reduction taken by discretionary programs to meet the caps, and domestic discretionary spending might have to absorb more than 70 percent of the reduction. This outcome compares with that of defense absorbing about 80 percent of the reduction in the Administration's plan.

**Longer Term.** Over the longer term, larger forces raise even more concerns about affordability. CBO has not done a detailed analysis of the added costs. But the addition to annual operating costs would be joined by substantially higher requirements for procurement funding, since more equipment would be needed for the larger number of forces.

### **Alternatives That Save Money**

Though there is some support for adding to the defense budget, there may be just as much or more pressure to save additional amounts from defense. Pressure for large budget reductions may have eased somewhat because of concerns about world events. But pressure for decreases may result simply as budget forecasts become reality. The following options discuss ways of making modest cuts to defense spending.

**Smaller Forces.** If the United States were to cut two additional tactical air wings, two more carriers, and three of the Army's four light divisions from the Administration's force levels, the defense budget might be about \$23 billion lower than the Administration plans during the five-year period through 1999 (see Table 6).<sup>9</sup>

After such force reductions, military capability would of course be lower. The ratios of forces in Southwest Asia would fall to about 2.6:1 after all active forces were deployed from the 2.8:1 for the BUR forces. The Korean ratio would fall from 2.6:1 for the BUR forces to about 2.5:1.

The United States might be able to make up shortfalls with reserve ground forces, though they would not be ready early in either war. In the preceding analysis, CBO did not assume that units in the Army National Guard would be deployed, since this presentation of analysis discusses only three months and even the readiest of the Guard's units might take about that

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9. The force reductions discussed here are taken from CBO's publication *Reducing the Deficit: Spending and Revenue Options*. The 1994 edition contains a number of force reductions that the Congress might consider.

long to become ready to be deployed, according to Army estimates. It also seemed reasonable that the United States would withhold some forces even when engaged in two conflicts. Mobilized Guard units might fill this role. But if more forces were cut, as this option assumes, at least some of the Guard units might also be deployed eventually, thus offsetting the reductions in active capability.

**Reduce Operating Costs for Planned Forces.** Another way to save operating dollars might be to reduce the funds spent per unit. This reduction could be made by flying planes less, keeping ships in port, and cutting down on the number of days tanks are driven (so-called operating or "op" tempo.) It might also be done by relying more on reserve forces.

**Reduce the Operating Tempo of Forces.** CBO lacks the data to estimate the total decrease in funding that results from reductions in operating tempo, but it may be relatively small compared with reducing the number of forces. For example, a 50 percent reduction in the number of hours flown by an Air Force F-16 squadron would produce a cut of only about 20 percent of the squadron's direct operating costs. It might produce even more modest reductions in indirect costs, and none at all in overhead. (About \$8 million would be cut out of an annual squadron operating cost of about \$40 million in 1995 dollars.)

Perhaps more important, keeping up training depends heavily on operating tempo, and a number of military leaders have emphasized the priority they give to avoiding decreasing training and creating "hollow forces." But DoD has made some cuts to the operating tempo of some forces, particularly those that had to be available immediately for strategic deterrence purposes during the Cold War. For example, strategic bombers that remained on 24-hour alert no longer do so. There may be other areas--for example, the fleet of Trident submarines--where operating tempo could be cut, thus producing savings.

**Rely More on Reserves.** DoD could also rely more on reserve forces. Reserve forces typically cost less to operate than active forces. For example, divisions in the Army National Guard cost only about 25 percent as much as active divisions. Air and naval reserve forces also cost less than their active counterparts, though they save less than ground forces. These lower costs probably had a good deal to do with the total-force policy originally articulated by then Secretary of Defense Melvin Laird in the early 1970s. Defense planners, confronted with the formidable threat of the former Soviet Union and a public disillusioned by defense spending as U.S. participation in the war in Vietnam drew to a close, proposed relying on cheaper reserve

forces. The United States could do this again and reduce the average costs of the forces it keeps.

Heavier reliance on reserve forces, however, would raise concerns about readiness, particularly for the Army, where savings are greatest. Such concerns probably arise from a perception that Guard forces were not available quickly enough in the war with Iraq. The active Army now expects to fill out its divisions with three active brigades, rather than keeping two active brigades and counting on Guard brigades to round out the division on mobilization. Reversing this policy and also looking for opportunities in the other services to make more use of reserve forces could save substantial amounts of money, though, once again, probably less than would outright force cuts. At least for Army forces, concerns would then be raised about whether Guard forces can be available quickly enough to be useful in rapidly arising regional wars.

### **Reduce Acquisition Programs**

A number of reductions to procurement funds might also be considered, especially in the near term. Development funding might also be cut.

**Reduce Procurement Funding.** Although DoD's budgets will buy considerably fewer weapons during the next five years than they have in past periods, some weapons might not be needed to counter the smaller and less capable threats the United States might face. In its annual publication on possible deficit reductions, CBO provides a number of options that would cancel systems. The Congress might consider eliminating some of these systems, perhaps replacing them with less costly ones. (Three program changes were selected as examples--one each for the Army, Navy, and Air Force. Table 6 shows the savings associated with canceling them.)

DoD expects to buy several weapons--particularly ships--not because of current shortfalls in inventory, but rather to preserve the industrial capability needed for potential future procurement. In contrast, DoD has been willing to forgo producing new equipment to maintain the industrial base for tanks, though it does plan on substantial modifications to the existing tank fleet that should sustain much of the capability for tank production. To meet budget targets, the Army once was willing to cancel all tank production. At that time, it argued that the cost of continuing tank production exceeds the cost of storing plant stock and facilities until the next time a tank is needed for

inventory purposes (around 2009, though the Army may wait longer since it has not yet started development of a new tank).<sup>10</sup>

The Navy and the Air Force might be able to tolerate similar gaps in new procurement. As with Army tanks, the Navy has excess stocks of ships and the Air Force of planes, compared with the stocks they would need for the smaller planned forces. Both services, however, seem to be at least contemplating the possibility of accelerating retirement schedules of less desirable equipment to bring inventories more in line with requirements. In view of this surplus, further cuts to procurement might be taken, especially if there are other ways to hedge against lost production facilities. CBO has not performed a detailed analysis to determine if problems exist that make the Army's willingness to "mothball" its industrial base less appropriate for the other services.

Reduce Development Funding. The Congress or the Administration could also reduce development funding further. The Administration plans to reduce funding for development by 1999 to about 12 percent of the budget. This share is lower than the 14 percent share that development was given in 1994, but it remains higher than its historical share of about 11 percent from 1950 to 1993. Given reduced worries about innovation by potential adversaries, further cuts to development might be acceptable. Cutting development's share of DoD funding by 1 percentage point per year, while keeping other titles at their requested levels, would save about \$12 billion over the five-year period starting in 1995.

Ultimately, such reductions may be difficult to realize. In particular, under the RDT&E title it may not be easy to cut those portions of spending that reflect nontraditional spending with high priority, such as funds for defense conversion and environmental cleanup. In addition, the United States may want to keep a fairly high level of basic research even in a fairly safe world because research is a relatively inexpensive hedge against uncertainty.

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10. Congressional Budget Office, "Alternatives for the U.S. Tank Industrial Base," CBO Paper (February 1993).

**APPENDIX A: TABLES PRESENTING ANALYTIC ASSUMPTIONS FOR  
CBO'S LONG-TERM FUNDING ANALYSIS**

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**TABLE A-1. CBO ASSUMPTIONS BEHIND PROJECTIONS OF LONG-TERM COSTS, 2000 TO 2010**

<b>Budget Category</b>	<b>Estimate A</b>	<b>Estimate B</b>
<b>For All Military Services</b>		
<b>Military Personnel</b>	Administration estimate for 1999 held constant.	Same.
<b>Operation and Maintenance</b>	Administration estimate for 1999 held constant.	Same.
<b>Major Weapon System Procurement</b>	Uses DoD prices and planned replacement schedules.	Incorporates estimate of cost growth.
<b>Minor Procurement</b>	Estimate based on factors related to force size.	Regression on major procurement spending.
<b>Research and Development</b>	Historical real average amount held constant.	Historical average share of total DoD budget.
<b>Military Construction and Family Housing</b>	Estimate based on factors related to force size.	Same.
<b>For Other DoD Categories</b>		
<b>Ballistic Missile Defense</b>	Administration estimates through 2005. Constant real spending thereafter.	Incorporates estimate of cost growth.
<b>Defense Health Program</b>	Estimate based on expansion of managed health care nationwide.	Some cost growth due to expansion of managed health care nationwide.
<b>Environmental Spending</b>	Cleanup of past hazardous waste sites expands over 2000 to 2004, then slows.	Incorporates estimate of cost growth.
<b>Defense Conversion</b>	Personnel, community, and dual-use technology programs end in 1999.	Dual-use technology programs continue through 2010.
<b>Other Defense-Wide/ Defense Agency</b>	Administration estimate for 1999 held constant.	Same share of DoD budget as in 1999.
<b>Other National Security</b>	Administration estimate for 1999 held constant.	Same.

SOURCE: Congressional Budget Office.  
 NOTE: DoD = Department of Defense.

**TABLE A-2. PROCUREMENT OF SELECTED MAJOR WEAPONS UNDER THE ADMINISTRATION'S PLAN, AS ESTIMATED BY CBO**

Category	FYDP, 1995- 1999 Period	2000- 2010 Period	Maximum Annual Rate	Program Timing
<b>Army</b>				
Attack Helicopters	0	1,008	120	Begins in 2001
<b>Navy</b>				
Carriers	1	3	1	n.a.
Destroyers	15	33	3	n.a.
Attack Submarines				
Seawolf	1	0	1	Procured in 1996
New Attack Submarine	1	16	2	Begins in 1998
Attack Aircraft				
F/A-18 C/D	72	0	36	Ends in 1997
F/A-18 E/F	72	528	48	Begins in 1997
JAST	0	18	12	Begins in 2009
<b>Air Force</b>				
Tactical Combat Aircraft				
F-22	20	422	48	Begins in 1997
JAST	0	120	48	Begins in 2007
Airlift Aircraft				
C-17	50	44	12	Ends in 2003

SOURCE: Congressional Budget Office based on Department of Defense data.

NOTE: FYDP = Future Years Defense Program; JAST = Joint Advanced Strike Technology; n.a. = not available.

**TABLE A-3. AVERAGE UNIT PROCUREMENT COSTS ASSUMED BY CBO**  
(In millions of 1995 dollars)

	Lower Estimate	Higher Estimate
<b>Army</b>		
Attack Helicopters RAH-66	23	29
<b>Navy and Marine Corps</b>		
Carriers	4,600	5,500
Destroyers <sup>a</sup>	700	900
Attack Submarines		
Seawolf	2,400 <sup>b</sup>	2,700 <sup>c</sup>
New attack submarine	1,500	1,800
Attack Aircraft		
F/A-18E/F	60	80
JAST	55	80
<b>Air Force</b>		
Tactical Combat Aircraft		
F-22	90	120
JAST	35	50
Airlift Aircraft		
C-17	275	275

SOURCE: Congressional Budget Office based on Department of Defense data.

NOTES: FYDP = Future Years Defense Program; JAST = Joint Advanced Strike Technology.

CBO assumes the Navy will spend about \$1 billion per year on the V-22.

- a. The DDG-51 costs \$900 million each. The lower estimate of \$700 million and higher estimate of \$900 million are the costs for the DDG-51 successor.
- b. Of the unit costs of \$2.4 billion for the third Seawolf, about \$900 million has already been funded. About \$1.5 billion would be needed to complete the ship in fiscal year 1996.
- c. Assumes continuing cost overruns on Seawolf submarines.

## **APPENDIX B: MIRKWOOD ASSUMPTIONS AND METHODOLOGY**

**MIRKWOOD is a model developed to simulate the first 90 days of deployment of U.S. military forces to theaters of two nearly simultaneous major regional contingencies. It also measures the total capability of forces within a theater using TASCFORM scores for both U.S. forces that have arrived in port and all allied and opposition forces. TASCFORM (Technique for Assessing Comparative Force Modernization) was developed by The Analytic Sciences Corporation (TASC) to measure relative performance of weapon systems. The model does not measure forces engaged in combat: that step would involve modeling intratheater mobility, logistics constraints, strategic decisions, and tactical choices made by the commanders in the field, all of which are beyond the scope of this analysis.**

**MIRKWOOD does not reflect the impact of attrition; command, control, communications, and intelligence; morale; training; leadership; or other factors which would influence the outcome of the war.**

**The strategic mobility portion of the model makes a number of assumptions about mobility performance, which were taken from military planning factors when available. In MIRKWOOD, active component units are mobilized without difficulty, and deployed to U.S. airports or seaports without constraints. It is assumed that no traffic congestion-related delays take place at such ports, en route, or at the destination. In the two contingencies actually analyzed here (Southwest Asia and Korea), airfields and ports to be used meet the requirements for airport and seaport space. However, political or military constraints on the use of airfields, mining of seaports, or other similar factors could constrain the deployment.**

**Reserve components that play a role in the movement of forces are assumed to be called up and available immediately. Other Air National Guard and Air Force Reserve tactical units would be available within the first month; all other reserve-component combat units are assumed to be unavailable through the 90-day period of analysis, though they might be available and used later.**

**The analysis assumes that improvements to mobility assets in the Administration's plan, such as the construction and conversion of sealift, procurement of the first 40 C-17s, and software and administrative improvements at Transportation Command, are carried out fully as of 2001. Ninety percent of military airlift and all military sealift (including the Ready Reserve Fleet) are assumed to be available for mobility operations. The Marines would maintain their three brigade-sized prepositioning squadrons, and the Army would establish two brigades of prepositioned equipment in Southwest Asia and an additional brigade afloat. The Civil Reserve Air Fleet would be activated at Stage II immediately, and at Stage III at the beginning**

of the second major regional contingency. Approximately 500,000 tons of commercial containerized shipping would be contracted for; the additional sealift this provides combined with sealift not used in unit deployment would be enough to sustain the forces with high estimates of sustainment requirements.

Calculations for airlift were performed by using a spreadsheet model that included the effects of maintenance limitations on aircraft availability; availability of pilots and operating assumptions; en-route basing; planning factors for average payloads; and maximum on-ground limitations for airfields. This approach was considered by Air Mobility Command to be an acceptable methodology.

Sealift totals were derived from a computer simulation of the movement of individual ships and ship types from the United States to theater, using Navy planning factors for activation rates, speeds, and operating cycles, and Army assumptions for loading, unloading, and average cargo by square feet. MIRKWOOD does not adjust cargo utility for various types of unit equipment. CBO's model assumed--based on averaging Army factors--that about 30 percent of the space on ships goes unused.

Total airlift and sealift capacity are then matched against an illustrative deployment schedule based on experience in the war with Iraq, service comments, and CBO assumptions. The resulting capability (in TASCFORM scores) for the cumulative equipment deployed in theater is measured against the total score for the armed forces of the opposition.

United States combat forces are assumed to be at 1999 bottom-up review levels. The model assumed that one of the two U.S. divisions stationed in Europe would be deployed to Southwest Asia; the other, along with nondivisional assets, would remain in Europe. Estimates of allied and enemy force structures are as of 1993 and are from *The Military Balance 1993-1994*, by the International Institute for Strategic Studies.



